

# SEQUENCE LISTING

<110> Dobie, Kenneth W.  
 Bhanot, Sanjay  
 Veniant-Ellison, Murielle  
 Lindberg, Richard A.  
 Shutter, John R.

<120> MODULATION OF FORKHEAD BOX O1A EXPRESSION

<130> AMGN0001-101

<150> US 10/260,203

<151> 2002-09-26

<160> 176

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 1

tccgtcatcg ctcctcaggg

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 2

gtgcgcgcga gcccgaaatc

20

<210> 3

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 3

atgcattctg cccccaagga

20

<210> 4

2

125					130					135						
ccc Pro	ccc Pro	gcc Ala 140	gcc Ala	gct Ala	ggg Gly	ccg Pro	ctc Leu 145	gcg Ala	ggg Gly	cag Gln	ccg Pro	cgc Arg 150	aag Lys	agc Ser	agc Ser	844
tcg Ser	tcc Ser 155	cgc Arg	cgc Arg	aac Asn	gcg Ala	tgg Trp 160	ggc Gly	aac Asn	ctg Leu	tcc Ser	tac Tyr 165	gcc Ala	gac Asp	ctc Leu	atc Ile	892
acc Thr 170	aag Lys	gcc Ala	atc Ile	gag Glu	agc Ser 175	tcg Ser	gcg Ala	gag Glu	aag Lys	cgg Arg 180	ctc Leu	acg Thr	ctg Leu	tcg Ser	cag Gln 185	940
atc Ile	tac Tyr	gag Glu	tgg Trp	atg Met 190	gtc Val	aag Lys	agc Ser	gtg Val	ccc Pro 195	tac Tyr	ttc Phe	aag Lys	gat Asp	aag Lys 200	ggt Gly	988
gac Asp	agc Ser	aac Asn 205	agc Ser	tcg Ser	gcg Ala	ggc Gly	tgg Trp	aag Lys 210	aat Asn	tca Ser	att Ile	cgt Arg	cat His 215	aat Asn	ctg Leu	1036
tcc Ser	cta Leu	cac His 220	agc Ser	aag Lys	ttc Phe	att Ile	cgt Arg 225	gtg Val	cag Gln	aat Asn	gaa Glu	gga Gly 230	act Thr	gga Gly	aaa Lys	1084
agt Ser	tct Ser 235	tgg Trp	tgg Trp	atg Met	ctc Leu	aat Asn 240	cca Pro	gag Glu	ggt Gly	ggc Gly	aag Lys 245	agc Ser	ggg Gly	aaa Lys	tct Ser	1132
cct Pro 250	agg Arg	aga Arg	aga Arg	gct Ala	gca Ala 255	tcc Ser	atg Met	gac Asp	aac Asn	aac Asn 260	agt Ser	aaa Lys	ttt Phe	gct Ala	aag Lys 265	1180
agc Ser	cga Arg	agc Ser	cga Arg	gct Ala 270	gcc Ala	aag Lys	aag Lys	aaa Lys	gca Ala 275	tct Ser	ctc Leu	cag Gln	tct Ser	ggc Gly 280	cag Gln	1228
gag Glu	ggt Gly	gct Ala	ggg Gly 285	gac Asp	agc Ser	cct Pro	gga Gly	tca Ser 290	cag Gln	ttt Phe	tcc Ser	aaa Lys	tgg Trp 295	cct Pro	gca Ala	1276
agc Ser	cct Pro	ggc Gly 300	tct Ser	cac His	agc Ser	aat Asn	gat Asp 305	gac Asp	ttt Phe	gat Asp	aac Asn	tgg Trp 310	agt Ser	aca Thr	ttt Phe	1324
cgc Arg	cct Pro 315	cga Arg	act Thr	agc Ser	tca Ser	aat Asn 320	gct Ala	agt Ser	act Thr	att Ile	agt Ser 325	ggg Gly	aga Arg	ctc Leu	tca Ser	1372
ccc Pro 330	att Ile	atg Met	acc Thr	gaa Glu	cag Gln 335	gat Asp	gat Asp	ctt Leu	gga Gly	gaa Glu 340	ggg Gly	gat Asp	gtg Val	cat His	tct Ser 345	1420
atg Met	gtg Val	tac Tyr	ccg Pro	cca Pro 350	tct Ser	gcc Ala	gca Ala	aag Lys	atg Met 355	gcc Ala	tct Ser	act Thr	tta Leu	ccc Pro 360	agt Ser	1468

ctg tct gag ata agc aat ccc gaa aac atg gaa aat ctt ttg gat aat	1516
Leu Ser Glu Ile Ser Asn Pro Glu Asn Met Glu Asn Leu Leu Asp Asn	
365 370 375	
ctc aac ctt ctc tca tca cca aca tca tta act gtt tcg acc cag tcc	1564
Leu Asn Leu Leu Ser Ser Pro Thr Ser Leu Thr Val Ser Thr Gln Ser	
380 385 390	
tca cct ggc acc atg atg cag cag acg ccg tgc tac tcg ttt gcg cca	1612
Ser Pro Gly Thr Met Met Gln Gln Thr Pro Cys Tyr Ser Phe Ala Pro	
395 400 405	
cca aac acc agt ttg aat tca ccc agc cca aac tac caa aaa tat aca	1660
Pro Asn Thr Ser Leu Asn Ser Pro Ser Pro Asn Tyr Gln Lys Tyr Thr	
410 415 420 425	
tat ggc caa tcc agc atg agc cct ttg ccc cag atg cct ata caa aca	1708
Tyr Gly Gln Ser Ser Met Ser Pro Leu Pro Gln Met Pro Ile Gln Thr	
430 435 440	
ctt cag gac aat aag tcg agt tat gga ggt atg agt cag tat aac tgt	1756
Leu Gln Asp Asn Lys Ser Ser Tyr Gly Gly Met Ser Gln Tyr Asn Cys	
445 450 455	
gcg cct gga ctc ttg aag gag ttg ctg act tct gac tct cct ccc cat	1804
Ala Pro Gly Leu Leu Lys Glu Leu Leu Thr Ser Asp Ser Pro Pro His	
460 465 470	
aat gac att atg aca cca gtt gat cct ggg gta gcc cag ccc aac agc	1852
Asn Asp Ile Met Thr Pro Val Asp Pro Gly Val Ala Gln Pro Asn Ser	
475 480 485	
cgg gtt ctg ggc cag aac gtc atg atg ggc cct aat tcg gtc atg tca	1900
Arg Val Leu Gly Gln Asn Val Met Met Gly Pro Asn Ser Val Met Ser	
490 495 500 505	
acc tat ggc agc cag gca tct cat aac aaa atg atg aat ccc agc tcc	1948
Thr Tyr Gly Ser Gln Ala Ser His Asn Lys Met Met Asn Pro Ser Ser	
510 515 520	
cat acc cac cct gga cat gct cag cag aca tct gca gtt aac ggg cgt	1996
His Thr His Pro Gly His Ala Gln Gln Thr Ser Ala Val Asn Gly Arg	
525 530 535	
ccc ctg ccc cac acg gta agc acc atg ccc cac acc tcg ggt atg aac	2044
Pro Leu Pro His Thr Val Ser Thr Met Pro His Thr Ser Gly Met Asn	
540 545 550	
cgc ctg acc caa gtg aag aca cct gta caa gtg cct ctg ccc cac ccc	2092
Arg Leu Thr Gln Val Lys Thr Pro Val Gln Val Pro Leu Pro His Pro	
555 560 565	
atg cag atg agt gcc ctg ggg ggc tac tcc tcc gtg agc agc tgc aat	2140
Met Gln Met Ser Ala Leu Gly Gly Tyr Ser Ser Val Ser Ser Cys Asn	
570 575 580 585	

ggc tat ggc aga atg ggc ctt ctc cac cag gag aag ctc cca agt gac	2188
Gly Tyr Gly Arg Met Gly Leu Leu His Gln Glu Lys Leu Pro Ser Asp	
590 595 600	
ttg gat ggc atg ttc att gag cgc tta gac tgt gac atg gaa tcc atc	2236
Leu Asp Gly Met Phe Ile Glu Arg Leu Asp Cys Asp Met Glu Ser Ile	
605 610 615	
att cgg aat gac ctc atg gat gga gat aca ttg gat ttt aac ttt gac	2284
Ile Arg Asn Asp Leu Met Asp Gly Asp Thr Leu Asp Phe Asn Phe Asp	
620 625 630	
aat gtg ttg ccc aac caa agc ttc cca cac agt gtc aag aca acg aca	2332
Asn Val Leu Pro Asn Gln Ser Phe Pro His Ser Val Lys Thr Thr Thr	
635 640 645	
cat agc tgg gtg tca ggc tga gggttagtga gcaggttaca cttaaaagta	2383
His Ser Trp Val Ser Gly	
650 655	
cttcagattg tctgacagca ggaactgaga gaagcagtc aaagatgtct ttcaccaact	2443
cccttttagt tttcttggtt aaaaaaaaaa aaaaaaaaaa aaacctcctt ttttttcctt	2503
togtcagact tggcagcaaa gacatttttc ctgtacagga tgtttgccca atgtgtgcag	2563
gttatgtgct gctgtagata aggactgtgc cattggaaat ttcattacaa tgaagtgccca	2623
aactcactac accatataat tgcagaaaag attttcagat cctggtgtgc tttcaagttt	2683
tgtatataag cagtagatac agattgtatt tgtgtgtgtt tttggttttt ctaaatatcc	2743
aattggtcca aggaaagttt atactctttt tgtaatactg tgatgggcct catgtcttga	2803
taagttaaac ttttgtttgt actacctgtt ttctgcggaa ctgacggatc acaaagaact	2863
gaatctccat tctgcatctc cattgaacag ccttggaact gttcacgttg ccacagaatt	2923
cacatgagaa ccaagtagcc tgttatcaat ctgctaaatt aatggacttg ttaaactttt	2983
ggaaaaaaaa agattaaatg ccagctttgt acaggtcttt tctatttttt tttgtttatt	3043
ttgttatattg caaatgtga caaacattta aatggttcta atttccagat aaatgatttt	3103
tgatgttatt gttgggactt aagaacattt ttggaataga tattgaactg taataatgtt	3163
ttcttaaaac tagagtctac tttgttacat agtcagcttg taaattttgt ggaaccacag	3223
gtatttgggg cagcattcat aattttcatt ttgtattcta actggattag tactaatttt	3283
atacatgctt aactggtttg tacactttgg gatgctactt agtgatgttt ctgactaatc	3343
ttaaatcatt gtaattagta cttgcatatt caacgtttca ggccctgggt gggcaggaaa	3403
gtgatgtata gttatggaca ctttgcgttt cttatttagg ataacttaat atgtttttat	3463
gtatgtattt taaagaaatt tcactgctt ctactgaact atgcgtactg catagcatca	3523

agtcttctct agagacctct gtagtcctgg gaggcctcat aatgtttgta gatcagaaaa 3583  
 gggagatctg catctaaagc aatggctcctt tgtcaaacga gggattttga tccacttcac 3643  
 cattttgagt tgagcttttag caaaagtttc ccctcataat tctttgctct tgtttcagtc 3703  
 caggtggagg ttggttttgt agttctgcct tgaggaatta tgtcaacact catacttcat 3763  
 ctcatctcc cttctgccct gcagattaga ttacttagca cactgtggaa gtttaagtgg 3823  
 aaggaggga tttaaaaatg ggaacttgagt ggttttaga atttgtgttc ataagttcag 3883  
 atgggtagca aatggaatag aacttactta aaaattgggg agatttattt gaaaaccagc 3943  
 tgtaagtgt gcattgagat tatgttaaaa gccttggctt aagaatttga aaatttcttt 4003  
 agcctgtagc aacctaaact gtaattccta tcattatgtt ttattacttt ccaattacct 4063  
 gtaactgaca gaccaaatta attggctttg tgctctatct agtccatcag tattttcaag 4123  
 tcatgtggaa agcccaaagt catcacaatg aagagaacag gtgcacagca ctgttcctct 4183  
 tgtgttcttg agaaggatct aatttttctg tatatagccc acatcacact tgctttgtct 4243  
 tgtatgttaa ttgcatcttc attggcttgg tatttcctaa atgtttaaca agaacacaag 4303  
 tgttcctgat aagatttcct acagtaagcc agctgtattg taagcttccc accgtgatga 4363  
 tcattttttt gaagattcat tgaacagcca ccaactctatc atcctcattt tggggcagtc 4423  
 caagacatag ctggtttttag aaacccaagt tcctctaagc acagcctccc gggatatgtaa 4483  
 ctgaacttgg tgccaaagta cttgtgtact aatttctatt actacgtact gtcactttcc 4543  
 tcccgtgcca ttactgcac ataatacaag gaacctcaga gccccattt gttcattaaa 4603  
 gaggcaacta cagccaaaat cactgttaaa atcttactac ttcatggagt agctcttagg 4663  
 aaaatatatc ttctctctga gtctgggtaa ttatacctct cccaagcccc cattgtgtgt 4723  
 tgaaatcctg tcatgaatcc ttggtagctc tctgagaaca gtgaagtcca gggaaaggca 4783  
 tctggctctgt ctggaaagca aacattatgt ggcctctggg agtttttttc ctgtaagaat 4843  
 actgactttc tggagtaatg agtatatatc agttattgta catgattgct ttgtgaaatg 4903  
 tgcaaatgat atcacctatg cagccttggt tgatttattt tctctggttt gtactgttat 4963  
 taaaagcata ttgtattata gagctattca gatattttta atataaagat gtattgtttc 5023  
 cgtaatatag acgtatggaa tatatttagg taatagatgt attacttga aagttctgct 5083  
 ttgacaaact gacaaagtct aatgagcac atgtatccca gtgagcagta aatcaatgga 5143  
 acatcccaag aagaggataa ggatgcttaa aatggaaatc attctccaac gatatacaaa 5203

```

ttggacttgt tcaactgctg gatatatgct accaataacc ccagcccca cttaaaattc 5263
ttacattcaa gtcctaaga gttcttaatt tataactaat tttaaaagag aagtttcttt 5323
tctgggtttta gtttggaat aatcattcat taaaaaaaaat gtattgtggt ttatgcgaac 5383
agaccaacct ggcattacag ttggcctctc cttgaggtgg gcacagcctg gcagtgtggc 5443
caggggtggc catgtaagtc ccatcaggac gtagtcatgc ctctgcatt tcgctaccog 5503
agtttagtaa cagtgcagat tccacgttct tgttccgata ctctgagaag tgcctgatgt 5563
tgatgtactt acagacacaa gaacaatctt tgctataatt gtataaagcc ataaatgtac 5623
ataaattatg tttaaatggc ttggtgtctt tcttttctaa ttatgcagaa taagctcttt 5683
attaggaatt ttttgtgaag ctattaaata cttgagttaa 5723

```

```

<210> 5
<211> 20
<212> DNA
<213> Artificial Sequence

```

<220>

<223> PCR Primer

```

<400> 5
gcaatccccga aaacatggaa 20

```

```

<210> 6
<211> 20
<212> DNA
<213> Artificial Sequence

```

<220>

<223> PCR Primer

```

<400> 6
caggtgagga ctgggtcgaa 20

```

```

<210> 7
<211> 34
<212> DNA
<213> Artificial Sequence

```

<220>

<223> PCR Probe

```

<400> 7
tgataatct caaccttctc tcatcaccaa catc 34

```

<210> 8  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> PCR Primer

<400> 8  
 gaaggtgaag gtcggagtc 19

<210> 9  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> PCR Primer

<400> 9  
 gaagatggtg atgggatttc 20

<210> 10  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> PCR Probe

<400> 10  
 caagcttccc gttctcagcc 20

<210> 11  
 <211> 4945  
 <212> DNA  
 <213> M. musculus

<220>

<220>

<221> CDS

<222> (429)...(2387)

<400> 11  
 gcccgctgca gatcccgtaa gacgggagtc tgcggagtcg cttcagtccc cgccgcccgc 60  
 acattcaaca ggcagcagcg ccgctgtcgc gcggccgcgg agagctagag cgccccgcag 120  
 cgtccgccccg tctgccttgg cgtccgcggc ccttgtcagc gggagcgcgg tgccccagct 180



gccgggctcc gcggcctggt cggtgccccg tcctaggcac gaactcggag gtccttaga	240
caccggtgac ccagcgaagt taagttctg gcgcgtccgt ccgctgcgcc ccgccgcgcc	300
tgactccggc gtgcgtccgc cgtccgcggc cccccaatct cggagcgaca ctccgggtcgc	360
ccgctccgcg cccccggtgg ccgctctctc cggtacttct ctgctggtgg gggaggggag	420
ggggcacc atg gcc gaa gcg ccc cag gtg gtg gag acc gac ccg gac ttc	470
Met Ala Glu Ala Pro Gln Val Val Glu Thr Asp Pro Asp Phe	
1 5 10	
gag ccg ctg ccc cgg cag cgc tcc tgt acc tgg ccg ctg ccc agg ccg	518
Glu Pro Leu Pro Arg Gln Arg Ser Cys Thr Trp Pro Leu Pro Arg Pro	
15 20 25 30	
gag ttt aac cag tcc aac tcg acc acc tcc agt ccg gcg ccg tcg ggc	566
Glu Phe Asn Gln Ser Asn Ser Thr Thr Ser Ser Pro Ala Pro Ser Gly	
35 40 45	
ggc gcg gcc gcc aac ccc gac gcc gcg gcg agc ctg gcc tcg gcg tcc	614
Gly Ala Ala Ala Asn Pro Asp Ala Ala Ala Ser Leu Ala Ser Ala Ser	
50 55 60	
gct gtc agc acc gac ttt atg agc aac ctg agc ctg ctg gag gag agt	662
Ala Val Ser Thr Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser	
65 70 75	
gag gac ttc gcg ccg gcg cca ggc tgc gtg gcc gtg gcg gcg gcg gct	710
Glu Asp Phe Ala Arg Ala Pro Gly Cys Val Ala Val Ala Ala Ala Ala	
80 85 90	
gcg gcc agc agg ggc ctg tgc ggg gac ttc cag ggc ccc gag gcg ggc	758
Ala Ala Ser Arg Gly Leu Cys Gly Asp Phe Gln Gly Pro Glu Ala Gly	
95 100 105 110	
tgc gtg cac cca gcg ccg cca cag ccc cca ccg acc ggg ccg ctg tcg	806
Cys Val His Pro Ala Pro Pro Gln Pro Pro Pro Thr Gly Pro Leu Ser	
115 120 125	
cag ccc cca ccc gtg cct ccc tcc gct gcc gcc gcc gcg ggg cca ctc	854
Gln Pro Pro Pro Val Pro Pro Ser Ala Ala Ala Ala Gly Pro Leu	
130 135 140	
gcg gga cag ccg cgc aag acc agc tcg tcg cgc cgc aac gcg tgg ggc	902
Ala Gly Gln Pro Arg Lys Thr Ser Ser Ser Arg Arg Asn Ala Trp Gly	
145 150 155	
aac ctg tcg tac gcc gac ctc atc acc aag gcc atc gag agc tca gcc	950
Asn Leu Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser Ala	
160 165 170	
gag aag agg ctc acc ctg tcg cag atc tac gag tgg atg gtg aag agc	998
Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys Ser	
175 180 185 190	

gtg ccc tac ttc aag gat aag ggc gac agc aac agc tcg gcg ggc tgg	1046
Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp	
195 200 205	
aag aat tca att cgc cac aat ctg tcc ctt cac agc aag ttt att cga	1094
Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile Arg	
210 215 220	
gtg cag aat gaa gga act gga aag agt tct tgg tgg atg ctc aat cca	1142
Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn Pro	
225 230 235	
gag gga ggc aag agc gga aaa tca ccc cgg aga aga gct gcg tcc atg	1190
Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser Met	
240 245 250	
gac aac aac agt aaa ttt gct aag agc cga ggg cgg gct gct aag aaa	1238
Asp Asn Asn Ser Lys Phe Ala Lys Ser Arg Gly Arg Ala Ala Lys Lys	
255 260 265 270	
aaa gca tct ctc cag tct ggg caa gag ggt cct gga gac agc cct ggg	1286
Lys Ala Ser Leu Gln Ser Gly Gln Glu Gly Pro Gly Asp Ser Pro Gly	
275 280 285	
tct cag ttt tct aag tgg cct gcg agt cct ggg tcc cac agc aac gat	1334
Ser Gln Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn Asp	
290 295 300	
gac ttt gat aac tgg agt aca ttt cgt cct cga acc agc tca aat gct	1382
Asp Phe Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn Ala	
305 310 315	
agt acc atc agt ggg aga ctt tct ccc atc atg aca gag cag gat gac	1430
Ser Thr Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp Asp	
320 325 330	
ctg gga gat ggg gac gtg cat tcc ctg gtg tat cca ccc tct gct gcc	1478
Leu Gly Asp Gly Asp Val His Ser Leu Val Tyr Pro Pro Ser Ala Ala	
335 340 345 350	
aag atg gcg tct acg ctg ccc agt ctg tct gaa atc agc aat cca gaa	1526
Lys Met Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro Glu	
355 360 365	
aac atg gag aac ctt ctg gat aat ctc aac ctt ctc tcg tcc cca aca	1574
Asn Met Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro Thr	
370 375 380	
tct tta act gtg tcc acc cag tcc tcg cct ggc agc atg atg cag cag	1622
Ser Leu Thr Val Ser Thr Gln Ser Ser Pro Gly Ser Met Met Gln Gln	
385 390 395	
aca cca tgc tat tcg ttt gca ccg cca aac acc agt cta aat tca ccc	1670
Thr Pro Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser Pro	
400 405 410	
agt cca aac tac tca aag tac aca tac ggc caa tcc agc atg agc cct	1718

Ser 415	Pro	Asn	Tyr	Ser	Lys 420	Tyr	Thr	Tyr	Gly	Gln 425	Ser	Ser	Met	Ser	Pro 430	
ttg	ccc	cag	atg	cct	atg	cag	aca	ctt	cag	gac	agc	aaa	tca	agt	tac	1766
Leu	Pro	Gln	Met	Pro	Met	Gln	Thr	Leu	Gln	Asp	Ser	Lys	Ser	Ser	Tyr	
				435					440					445		
gga	gga	ttg	aac	cag	tat	aac	tgt	gcc	cca	gga	ctc	ttg	aaa	gag	ttg	1814
Gly	Gly	Leu	Asn	Gln	Tyr	Asn	Cys	Ala	Pro	Gly	Leu	Leu	Lys	Glu	Leu	
			450					455					460			
ttg	act	tct	gac	tct	cct	ccc	cac	aat	gac	att	atg	tca	ccg	gtt	gat	1862
Leu	Thr	Ser	Asp	Ser	Pro	Pro	His	Asn	Asp	Ile	Met	Ser	Pro	Val	Asp	
		465					470					475				
ccc	gga	gtg	gcc	caa	ccc	aac	agt	cgg	gtc	ctg	ggc	caa	aat	gta	atg	1910
Pro	Gly	Val	Ala	Gln	Pro	Asn	Ser	Arg	Val	Leu	Gly	Gln	Asn	Val	Met	
	480					485					490					
atg	ggc	cct	aat	tcg	gtc	atg	cca	gcg	tat	ggc	agc	cag	gca	tct	cat	1958
Met	Gly	Pro	Asn	Ser	Val	Met	Pro	Ala	Tyr	Gly	Ser	Gln	Ala	Ser	His	
495					500					505					510	
aac	aaa	atg	atg	aac	ccc	agc	tcc	cac	acc	cac	cct	gga	cat	gca	cag	2006
Asn	Lys	Met	Met	Asn	Pro	Ser	Ser	His	Thr	His	Pro	Gly	His	Ala	Gln	
				515					520					525		
caa	acg	gct	tcg	gtc	aac	ggc	cgt	acc	ctg	ccc	cat	gtg	gtg	aac	acc	2054
Gln	Thr	Ala	Ser	Val	Asn	Gly	Arg	Thr	Leu	Pro	His	Val	Val	Asn	Thr	
			530					535					540			
atg	cct	cac	aca	tct	gcc	atg	aac	cgc	ttg	acc	ccc	gtg	aag	aca	cct	2102
Met	Pro	His	Thr	Ser	Ala	Met	Asn	Arg	Leu	Thr	Pro	Val	Lys	Thr	Pro	
		545					550					555				
tta	caa	gtg	cct	ctg	tcc	cac	ccc	atg	cag	atg	agt	gcc	ctg	ggc	agc	2150
Leu	Gln	Val	Pro	Leu	Ser	His	Pro	Met	Gln	Met	Ser	Ala	Leu	Gly	Ser	
	560					565					570					
tac	tcc	tcg	gtg	agc	agc	tgc	aat	ggc	tat	ggt	agg	atg	ggt	gtc	ctc	2198
Tyr	Ser	Ser	Val	Ser	Ser	Cys	Asn	Gly	Tyr	Gly	Arg	Met	Gly	Val	Leu	
575					580				585						590	
cac	cag	gag	aag	ctc	cca	agt	gac	ttg	gat	ggc	atg	ttt	att	gag	cgc	2246
His	Gln	Glu	Lys	Leu	Pro	Ser	Asp	Leu	Asp	Gly	Met	Phe	Ile	Glu	Arg	
				595					600					605		
ttg	gac	tgt	gac	atg	gag	tcc	atc	att	cgg	aat	gac	ctc	atg	gat	gga	2294
Leu	Asp	Cys	Asp	Met	Glu	Ser	Ile	Ile	Arg	Asn	Asp	Leu	Met	Asp	Gly	
			610					615					620			
gat	acc	ttg	gat	ttt	aac	ttt	gat	aat	gtg	ttg	ccc	aac	caa	agc	ttc	2342
Asp	Thr	Leu	Asp	Phe	Asn	Phe	Asp	Asn	Val	Leu	Pro	Asn	Gln	Ser	Phe	
		625					630					635				
cca	cac	agt	gtc	aag	act	aca	aca	cac	agc	tgg	gtg	tca	ggc	taa		2387
Pro	His	Ser	Val	Lys	Thr	Thr	Thr	His	Ser	Trp	Val	Ser	Gly			

640	645	650	
gagttagtga	gcaggctaca	tttaaaagtc	cttcagattg tctgacagca ggaactgagg 2447
agcagtccaa	agatgccctt	caccctcct	tatagttttc aagatttaaa aaaaaaaaaa 2507
aaaaaaaaaa	aagtcctttc	tcctttcctc	agacttggca acagcggcag cactttcctg 2567
tgcaggatgt	ttgcccagcg	tccgcagggt	ttgtgctcct gtagataagg actgtgccat 2627
tgggaatcat	tacaatgaag	tgccaaactc	actacaccat gtaattgcag aaaagacttt 2687
cagatcctgg	agtgtcttca	agttttgtat	atatgcagta gatacagaat tgtattttgtg 2747
tgtgtgtttt	ttaataccta	cttggtccaa	ggaaagttta tactcttttg taatactgtg 2807
atgggtctcaa	gtcttgataa	actttgcttt	gtactacctg tgttctgcta cagtgagaag 2867
tcataacta	agatctctgt	cctgcacctc	ggctgaatga ctgaacctgg tcatttgcca 2927
cagaacccat	gagagccaag	tagccagtga	tcaatgtgct gaattaatgg acttgtcaaa 2987
ctttggggca	gaataagatt	aagtgccagc	ttgttacagg tctttttcta ttgtttttgt 3047
tgttgtttat	ttgtttat	gcaaatttgt	acaacaact taaaatggtt ctaatttcca 3107
gataaatgac	ttttgatgtt	attgttagga	ctcaacatct tttggaatag ataccgaagt 3167
gtaatgtttt	cttaaaacta	gagtctactt	tgttacattg tctgcttata aatttgtgaa 3227
atcagaggta	tttgggggct	gcattcataa	ttttcatttt gtatttctaa ctggattagt 3287
actaatttta	tatgtgtctc	gctggtttgt	acactttgcg atgataacctg ataatgtttc 3347
tgactaatcg	taaaccattg	taattagtag	ttgcacactc aacgttcctg gccctttggg 3407
caggaaagt	atgtatagtt	acagacactc	tgttttgtgt gtagatttat gtgtgtattt 3467
taaagaaatt	tcacctgctt	ttattaccct	gtgagttgtg tacagcgcat agcaccaagt 3527
cttcagatag	atgccacgtg	cttacagcct	tctaggggaag cctgccagat gatgccctgt 3587
gtcacgctgt	catagttccc	atgggaactc	tgtctgtcgc tcaggaaagg ggaactttta 3647
tctaaggtga	tgttctttgt	ctgactgggg	ttgcctcct actactctga gctgttggct 3707
tttgtcacga	tggaggtggc	tttgtggctc	tgtcctggaa gaatcctgtc acttctcggt 3767
ccccacctct	gttctctttg	gctctgaaca	gtgtaaatct aaggaggaag ttacaaata 3827
ggacttcagt	gatttatgga	gtgctctgtg	cgcctaagta cagacagtgg caggattagt 3887
taaaaatgaa	ggcagtaaac	ttggaaacca	gccagctata aatggacatt tattttgaaa 3947
tccttagctt	aagaatttga	gaagtttttt	cagccttgag cagcctaata tgtctcaaac 4007
atttacgttt	tttatacatt	ctatttacct	gaaatcctgc cagaccagga taattgggtt 4067

tacctctcat tccgtccatc ggtgtttccc agtctccac agtttgagga atagatgtac	4127
cccagcacc cttcttgct ttatgagaag gcctggtttg catgagaaga ccaaattgca	4187
cttccatgag aagaccaa at tgtttgtagt gttacttagc tctcccctcg tttgttagtg	4247
tgtgttaaca agaataaaat gtccctgctt tcaccaccg ttggccagct ttgtcatagg	4307
cttcccacca taactttcac tattttaaac acatattgag ccactgctcg tctgactacc	4367
tttgtttggg cactccaaaa caggacttgt tttagaaatg aactcctcca agtagagcct	4427
ccttcaaaca gagtagaatt tcttgggtgtc aaagaacccg ggtctgtctc ctttctctcc	4487
tccctctgcc atttcttacc attgcggaaa gagagagcct ccgtgtgtaa tcattcagta	4547
gaggcagcta ccgccctggc agtgggtctac ctgctgaatg ccactgaatg actaggaggt	4607
gtctctccct tcagaagctg tcaatttcag cagcaacccc tgttttcctt ggtgttaaga	4667
tcccagtgtg aatcatgggc agttgtctgg ggcacagtga actccaggaa aggcttcgta	4727
tctgttttga aaacaaacat caaacgtgtg agctccgagg gtccttttct gggagaatgt	4787
tcgctttctg gtctattatt gtacatgatt gctctgtgaa aagacttcat ctatgcagcc	4847
ttgtttgatt catttccttt ggtgtgttct gttgttaaga gcaaattgta ttatagagct	4907
atttggatat tttaaataa aagatgtatt gtttccat	4945

<210> 12  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> PCR Primer

<400> 12	
caaagtacac atacggccaa tcc	23

<210> 13  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> PCR Primer

<400> 13	
cgtaacttga tttgctgtcc tgaa	24

<210> 14  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>

<223> PCR Probe

<400> 14  
tgagcccttt gccccagatg cctat

25

<210> 15  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 15  
ggcaaattca acggcacagt

20

<210> 16  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 16  
gggtctcgct cctggaagat

20

<210> 17  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>

<223> PCR Probe

<400> 17  
aaggccgaga atgggaagct tgtcatc

27

<210> 18  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 18  
 tgcctgttga atgtggcggc 20

<210> 19  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 19  
 ccggcctggg cagcggccag 20

<210> 20  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 20  
 ccctggaagt ccccgcacag 20

<210> 21  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 21  
 ttggtgatga ggtcggcgta 20

<210> 22  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 22  
tctcgatggc cttggtgatg 20

<210> 23  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 23  
ttgaagtagg gcacgctctt 20

<210> 24  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 24  
ctctggattg agcatccacc 20

<210> 25  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 25  
aaatttactg ttgttgtcca 20

<210> 26  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 26  
cttagcaaat ttactgttgt 20

<210> 27



<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 27  
ccagactgga gagatgcttt 20

<210> 28  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 28  
aatgtactcc agttatcaaa 20

<210> 29  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 29  
agagaagggtt gagattatcc 20

<210> 30  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 30  
gggctcatgc tggattggcc 20

<210> 31  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 31

gggaggagag tcagaagtca

20

<210> 32

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 32

tgagatgcct ggctgccata

20

<210> 33

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 33

atcattttgt tatgagatgc

20

<210> 34

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 34

cagggcactc atctgcatgg

20

<210> 35

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 35

tagccattgc agctgctcac

20

<210> 36  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 36  
gggagcttct cctggtggag 20

<210> 37  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 37  
catccaagtc acttgggagc 20

<210> 38  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 38  
aggtcattcc gaatgatgga 20

<210> 39  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 39  
gtatctccat ccatgaggtc 20

<210> 40  
<211> 20  
<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 40

ctttggttgg gcaacacatt

20

<210> 41

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 41

ggaagctttg gttgggcaac

20

<210> 42

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 42

tgacactgtg tgggaagctt

20

<210> 43

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 43

tgctgtcaga caatctgaag

20

<210> 44

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 44  
ggcacagtcc ttatctacag 20

<210> 45  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 45  
ttggcacttc attgtaatga 20

<210> 46  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 46  
ggtgtagtga gtttggcact 20

<210> 47  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 47  
aaagagtata aactttcctt 20

<210> 48  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 48  
tgtacaaatt tgcaaataac 20

<210> 49  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 49  
catttatctg gaaattagaa 20

<210> 50  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 50  
tagactctag tttaagaaa 20

<210> 51  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 51  
atgtaacaaa gtagactcta 20

<210> 52  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 52  
taaaattagt actaatccag 20

<210> 53  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 53

tgaaatttct ttaaaataca

20

<210> 54

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 54

aatcaaaca ggctgcatag

20

<210> 55

<211> 528

<212> DNA

<213> M. musculus

<220>

<400> 55

ggtgtgttct gttgttaaga gcaaattgta ttatagagct atttggatat tttaaataata 60

aagatgtatt gtttccataa tatagatgta tggagtatat ttaggtgata gatgtacaac 120

ttggaaagtt ctgcttggaac aaactgagtc taagttaatt agcaaataat atatcctgat 180

gagcaggaag ccctgaaacc taacaacagt aagcggagaa aatcacttaa aatggaaaca 240

gttccccaaa ggtgttcaat ttgaacttgt tcaactgctt aatatatggt cccccccccc 300

ccccaaaaaa aaaccttgaa gttcttagtt ttcagctctc caagttactg attttaagtg 360

aagtttctct gtggtttcag ctggggagtg attgttcagt agagtgtgca ttgtgcttta 420

tgcaaaccac acagcctggc cctgtggccg gggacagaca gacagcccgt caggatagag 480

tcccgcctt cgccaccaca gcggacttga gtaacagtgc agatgcct 528

<210> 56

<211> 391

<212> DNA

<213> M. musculus

<220>

<400> 56  
 gttcaactgc ttaatatattg tccccccccc ccccaaaaaa aaaaccttga agttcttagt 60  
 tttcagctcc ccaagttact gattttaagt gaagttctct gtggtttcag ctggggagtg 120  
 attgttcagt agagtgtgca ttgtgcttta tgcaaaccac acagcactgc cctgtggccg 180  
 gggacagaca gacagcccggt caggatagag tcccgccctt cgccaccaca gcggacttga 240  
 gtaacagtgc agatgccttg ctctgtttcc attgctatct gagaagtgcc tgatgaggat 300  
 ggtaaacctta cagacacaag aacaatcctt actgtgcgtt gtataaagcc ataaatgtac 360  
 ataaatcctc caaaaaaaaaa aaaaaaaaaa a 391

<210> 57  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 57  
 ctcccgtctt acgggatctg 20

<210> 58  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 58  
 cgctgctgcc tgttgaatgt 20

<210> 59  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 59  
 tgtctaagga gcctccgagt 20

<210> 60  
 <211> 20



<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 60  
cagagaagta ccgggagacg 20

<210> 61  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 61  
cttcggccat ggtgcccccg 20

<210> 62  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 62  
taaactccgg cctgggcagc 20

<210> 63  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 63  
caggttgccc cacgcgttgc 20

<210> 64  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 64

tggccttggt gatgaggtcg

20

<210> 65

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 65

ggtgagcctc ttctcggctg

20

<210> 66

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 66

tccagttcct tcattctgca

20

<210> 67

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 67

tcggctctta gcaaatttac

20

<210> 68

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 68

ctccagttat caaagtcac

20

<210> 69  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 69  
acagactggg cagcgtagac 20

<210> 70  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 70  
ggcaaagggc tcatgctgga 20

<210> 71  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 71  
accgaattag ggcccatcat 20

<210> 72  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 72  
ttgttatgag atgcctggct 20

<210> 73  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
 <223> Antisense Oligonucleotide  
 <400> 73  
 tcacttggga gcttctcctg 20  
  
 <210> 74  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide  
 <400> 74  
 acatgccatc caagtcactt 20  
  
 <210> 75  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide  
 <400> 75  
 tccatgaggt cattccgaat 20  
  
 <210> 76  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide  
 <400> 76  
 tgtgtgggaa gctttggttg 20  
  
 <210> 77  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide

<400> 77  
cactaactct tagcctgaca 20

<210> 78  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 78  
agttcctgct gtcagacaat 20

<210> 79  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 79  
ccaatggcac agtccttatc 20

<210> 80  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 80  
gtgagtttgg cacttcattg 20

<210> 81  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 81  
ataaactttc cttggaccaa 20

<210> 82

<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 82  
agacctgtac aaagctggca 20

<210> 83  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 83  
tctggaaatt agaaccattt 20

<210> 84  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 84  
ctagtttttaa gaaaacatta 20

<210> 85  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 85  
acaaagtaga ctctagtttt 20

<210> 86  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 86

tagtactaat ccagttagaa

20

<210> 87

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 87

tgcaagtact aattacaatg

20

<210> 88

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 88

tggtgctatg cgctgtacac

20

<210> 89

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 89

agctggctgg tttccaagtt

20

<210> 90

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 90

ggccttctca taaaggcaaa

20

<210> 91  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 91  
agttcactgt gccccagaca 20

<210> 92  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 92  
gaaacaatac atctttatat 20

<210> 93  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 93  
gactcagttt gtccaagcag 20

<210> 94  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 94  
gtttggtttg cataaagcac 20

<210> 95  
<211> 20  
<212> DNA



<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 95

gggccaggct gtttggtttg

20

<210> 96

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 96

ggcacttctc agatagcaat

20

<210> 97

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 97

gaggatttat gtacatttat

20

<210> 98

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 98

gccgccacat tcaacaggca

20

<210> 99

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 99

ctggccgctg cccaggccgg

20

<210> 100  
<211> 20  
<212> DNA  
<213> H. sapiens

<220>

<400> 100  
ctgtgcgggg acttccaggg 20

<210> 101  
<211> 20  
<212> DNA  
<213> H. sapiens

<220>

<400> 101  
tacgccgacc tcatcaccaa 20

<210> 102  
<211> 20  
<212> DNA  
<213> H. sapiens

<220>

<400> 102  
catcaccaag gccatcgaga 20

<210> 103  
<211> 20  
<212> DNA  
<213> H. sapiens

<220>

<400> 103  
aagagcgtgc cctacttcaa 20

<210> 104  
<211> 20  
<212> DNA  
<213> H. sapiens

<220>

<400> 104  
ggtggatgct caatccagag 20

<210> 105

<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 105	
tggaacaacaa cagtaaattt	20
<210> 106	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 106	
acaacagtaa atttgctaag	20
<210> 107	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 107	
aaagcatctc tccagtctgg	20
<210> 108	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 108	
tttgataact ggagtacatt	20
<210> 109	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 109	
ggataatctc aaccttctct	20
<210> 110	
<211> 20	
<212> DNA	

<213> H. sapiens

<220>

<400> 110

ggccaatcca gcatgagccc

20

<210> 111

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 111

tatggcagcc aggcattctca

20

<210> 112

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 112

gcatctcata acaaaatgat

20

<210> 113

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 113

ccatgcagat gagtgccctg

20

<210> 114

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 114

gtgagcagct gcaatggcta

20

<210> 115

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 115

gctcccaagt gacttggatg

20

<210> 116

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 116

tccatcattc ggaatgacct

20

<210> 117

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 117

gacctcatgg atggagatac

20

<210> 118

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 118

aatgtgttgc ccaaccaaag

20

<210> 119

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 119

gttgcccaac caaagcttcc

20

<210> 120

<211> 20

<212> DNA

<213> H. sapiens

<220>

<400> 120 aagcttccca cacagtgtca	20
<210> 121 <211> 20 <212> DNA <213> H. sapiens	
<220>	
<400> 121 cttcagattg tctgacagca	20
<210> 122 <211> 20 <212> DNA <213> H. sapiens	
<220>	
<400> 122 ctgtagataa ggactgtgcc	20
<210> 123 <211> 20 <212> DNA <213> H. sapiens	
<220>	
<400> 123 tcattacaat gaagtgccaa	20
<210> 124 <211> 20 <212> DNA <213> H. sapiens	
<220>	
<400> 124 agtgcctaac tcactacacc	20
<210> 125 <211> 20 <212> DNA <213> H. sapiens	
<220>	
<400> 125 aaggaaagtt tatactcttt	20

<210> 126	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 126	
gttatttgca aatttgtaca	20
<210> 127	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 127	
tagagtctac tttgttacat	20
<210> 128	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 128	
ctggattagt actaatttta	20
<210> 129	
<211> 20	
<212> DNA	
<213> H. sapiens	
<220>	
<400> 129	
ctatgcagcc ttgtttgatt	20
<210> 130	
<211> 20	
<212> DNA	
<213> M. musculus	
<220>	
<400> 130	
actcggaggc tccttagaca	20

<210> 131  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 131  
cgtctcccgg tacttctctg 20

<210> 132  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 132  
cgggggcacc atggccgaag 20

<210> 133  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 133  
gctgcccagg ccggagttta 20

<210> 134  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 134  
gcaacgcgtg gggcaacctg 20

<210> 135  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 135  
cagccgagaa gaggctcacc 20

<210> 136  
<211> 20



<212> DNA	
<213> M. musculus	
<220>	
<400> 136	
tgcagaatga aggaactgga	20
<210> 137	
<211> 20	
<212> DNA	
<213> M. musculus	
<220>	
<400> 137	
gatgactttg ataactggag	20
<210> 138	
<211> 20	
<212> DNA	
<213> M. musculus	
<220>	
<400> 138	
gtctacgctg cccagtctgt	20
<210> 139	
<211> 20	
<212> DNA	
<213> M. musculus	
<220>	
<400> 139	
tccagcatga gccctttgcc	20
<210> 140	
<211> 20	
<212> DNA	
<213> M. musculus	
<220>	
<400> 140	
atgatgggcc ctaattcggg	20
<210> 141	
<211> 20	
<212> DNA	
<213> M. musculus	

<220>

<400> 141

agccaggcat ctcataacaa

20

<210> 142

<211> 20

<212> DNA

<213> M. musculus

<220>

<400> 142

caggagaagc tcccaagtga

20

<210> 143

<211> 20

<212> DNA

<213> M. musculus

<220>

<400> 143

attcggaatg acctcatgga

20

<210> 144

<211> 20

<212> DNA

<213> M. musculus

<220>

<400> 144

caaccaaagc ttcccacaca

20

<210> 145

<211> 20

<212> DNA

<213> M. musculus

<220>

<400> 145

tgtcaggcta agagttagtg

20

<210> 146

<211> 20

<212> DNA

<213> M. musculus

<220>

<400> 146  
attgtctgac agcaggaact 20

<210> 147  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 147  
gataaggact gtgccattgg 20

<210> 148  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 148  
caatgaagtg ccaaactcac 20

<210> 149  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 149  
ttggtccaag gaaagtttat 20

<210> 150  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 150  
tgccagcttt gtacaggtct 20

<210> 151  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 151

aaatggttct aatttccaga 20

<210> 152  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 152  
gtgtacagcg catagcacca 20

<210> 153  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 153  
aacttggaaa ccagccagct 20

<210> 154  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 154  
tttgctttaa tgagaaggcc 20

<210> 155  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 155  
tgtctggggc acagtgaact 20

<210> 156  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 156  
ctgcttggac aaactgagtc 20

<210> 157  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 157  
gtgctttatg caaaccaaac

20

<210> 158  
<211> 20  
<212> DNA  
<213> M. musculus

<220>

<400> 158  
attgctatct gagaagtgcc

20

<210> 159  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 159  
tgccccacgc gttgcggcgg

20

<210> 160  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 160  
ggcaacgtga acaggtccaa

20

<210> 161  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 161 agctgactat gtaacaaagt	20
<210> 162 <211> 20 <212> DNA <213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 162 aactgtgatc cagggtgtc	20
<210> 163 <211> 20 <212> DNA <213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 163 cccagggcac tcattctgcat	20
<210> 164 <211> 20 <212> DNA <213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 164 ctaagcgctc aatgaacatg	20
<210> 165 <211> 20 <212> DNA <213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 165 tagcagattg ataacaggct	20
<210> 166	

<211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide  
 <400> 166  
 ggctgggtga attcaaactg 20

<210> 167  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide  
 <400> 167  
 catgaccgaa ttagggccca 20

<210> 168  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide  
 <400> 168  
 cattccgaat gatggattcc 20

<210> 169  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Antisense Oligonucleotide  
 <400> 169  
 cgagaggcgg acgggaccg 19

<210> 170  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence  
 <220>

<223> Antisense Oligonucleotide

<400> 170  
cgagaggcgg acgggaccgt t 21

<210> 171  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 171  
cgggtcccgtccgcctctcggt 21

<210> 172  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 172  
gctttggttg ggcaacacat 20

<210> 173  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 173  
ccgcttctcc gccgagctct 20

<210> 174  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 174  
ccgccagggc actcatctgc 20



<210> 175  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 175  
tgcttctctc agttcctgct 20

<210> 176  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 176  
catagaatgc acatcccctt 20